

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants: D. Foote et al. Attorney Docket No.: THAS122071
Application No.: 10/723,846 Art Unit: 3673 / Confirmation No.: 9688
Filed: November 26, 2003 Examiner: V.A. Patel
Title: SEAL CONFIGURATION TO REDUCE SEAL EXTRUSION

APPELLANTS' REPLY BRIEF

Seattle, Washington

November 27, 2007

TO THE COMMISSIONER FOR PATENTS:

This Reply Brief is filed in reply to the Examiner's Answer dated September 28, 2007, to the Appellants' Appeal Brief filed June 25, 2007.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

I. STATUS OF CLAIMS

Claim 1 has been finally rejected, and it is this rejection that is being appealed.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

II. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,150,836 (Walker) and as being anticipated by U.S. Patent No. 5,115,550 (Williamson). In view of these rejections, the issues presented for review on appeal are as follows:

Issue 1: Whether Walker teaches the seal configuration claimed in Claim 1.

Issue 2: Whether Williamson teaches the seal configuration claimed in Claim 1.

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100

III. ARGUMENT

In order to be anticipated, "every element of the claim must be shown in the reference, including all limitations." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920-21 (Fed. Cir. 1989). "[T]he reference must describe the claimed invention sufficiently to place it in the possession of a person of ordinary skill in the field." See *In re Paulsen*, 30 F.3d 1475 (Fed. Cir. 1997). It is appellants' position that neither Walker nor Williamson, as cited by the Examiner, anticipates Claim 1 of the present application.

Appellants reaffirm their prior arguments, and take the opportunity to reply to some of the issues raised in the Examiner's Answer.

Walker Does Not Teach the Seal Configuration in Claim 1

Claim 1 refers to a closure that closes an opening in a body used to contain internal pressure. The closure has "a planar surface from which projects an axially projecting stopper portion that fits closely within the opening." The Examiner has identified surface 20 as a planar surface, and the stopper portion is alleged to be the portion "that is contacted by ring surface 40 and having the groove to retain the seal." Ring surface 40 forms part of the cutout 28, which does not project from surface 20 or fit closely within the opening. However, to the extent that the Patent Office considers threaded portion 16 or thread relief 30 to be the stopper portion, this element is still not taught by Walker. While threaded portion 16 may extend past, or perpendicular to surface 20, it clearly does not extend from surface 20. Instead, it extends from cutout 28. These differences in design create different forces in the seal configurations. By extending from the planar surface, rather than a cutout, the seal configuration of Claim 1 uses primarily axial forces to retain the seals, while Walker uses primarily radial forces to retain the seals.

Claim 1 also refers to "a backing ring ... positioned in close fitting relation around the projecting stopper portion between the peripheral seal groove and the planar surface." The Examiner has suggested that, because one edge of the backup ring 42 contacts a portion of the cutout 28, Walker teaches a close fitting relationship. However, Claim 1 requires that the close fitting relationship be with the projecting stopper. Referring to Figs. 1 and 2, a portion of the backup ring 42 may be in close fitting relation with a portion of the cutout 28; however, it is clearly not in close fitting relation with the projecting stopper.

The Examiner also seems to suggest that the seal groove is only made up of thread relief 30. However, even if thread relief 30 is part of the groove, the cutout 28 must also form part of the groove if not all of the groove, as it is formed like a groove, and acts like a seal groove, by receiving and retaining the seals. Thus, since the backup ring 42 is positioned within the seal groove (cutout) 28, it cannot also be positioned between the seal groove and the planar surface.

Claim 1 further states that "the peripheral seal is extruded in an axial direction against the backing ring." The Examiner asserts that Walker teaches that the peripheral seal is extruded in an axial direction. Applicants agree that this is the case. However, Claim 1 requires that it be extruded axially against the backing ring. Walker does not teach this. It is clear from Fig. 4 of Walker that the O-ring 24 is extruded radially, and not axially, against the backup ring 42.

Appellants therefore submit that Walker does not teach all of the elements recited in Claim 1, inherently or explicitly, and thus Claim 1 is not anticipated by Walker.

Williamson Does Not Teach the Seal Configuration in Claim 1

The Examiner stated that appellants argued that Williamson fails to teach a backing ring of pliable memory retaining material. This statement is imprecise and requires correction. Appellants argued that the claimed backing ring of pliable memory retaining material could not

be equated to the deformable skirt portion 22 taught by Williamson. One reason for this is that the skirt portion 22 only deforms in a radial direction as it comes into contact with the tapered surface of a die, and will not, as claimed by Claim 1, "plastically deform by changing shape and applying sealing pressure" as the peripheral seal is extruded against it. The skirt portion 22 is deformed prior to being attached to the closure by inserting it into a die 76, as shown in FIG. 4, until surface 78 becomes straight, as shown in FIG. 7 (see Col. 6, lines 12 – 18). Once it has been sufficiently deformed, it is then removed from the die 76 and installed in the female port 36. The skirt portion 22 is made from a high tensile strength material such as brass, stainless steel, aluminum and mild steels. These materials bend about the undercut shoulder 80 when a downward force is applied to the end of the skirt 22; however, it cannot be assumed that these materials would compress along the length of the skirt portion to apply sealing pressure when pressure is applied through a rubber O-ring. To the contrary, any shift in the connection between the skirt 22 and the tapered surface 64 will itself result in an extrusion gap for an O-ring, which is contrary to what is claimed in Claim 1.

IV. CONCLUSION

In light of the above arguments and the arguments presented in appellants' main appeal brief, appellants submit that both Walker and Williamson fail to teach or suggest each and every element of Claim 1. Accordingly, appellants submit that the Office Action has failed to present a *prima facie* case of anticipation that supports a rejection of Claim 1. The Board should direct that the 35 U.S.C. § 102(b) rejection of Claim 1 be withdrawn and the Claim allowed.

Respectfully submitted,

CHRISTENSEN O'CONNOR
JOHNSON KINDNESS^{PLLC}



Kevan L. Morgan
Registration No. 42,015
Direct Dial No. 206.695.1712

KLM:jlb

LAW OFFICES OF
CHRISTENSEN O'CONNOR JOHNSON KINDNESS^{PLLC}
1420 Fifth Avenue
Suite 2800
Seattle, Washington 98101
206.682.8100